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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,836	02/25/2005	Steffen Scholze	DE02 0196 US	9613
65913	7590	10/09/2007		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER RADKIEWICZ, JARED	
			ART UNIT	PAPER NUMBER
			2624	
			NOTIFICATION DATE	DELIVERY MODE
			10/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/525,836</p>	<p>Applicant(s)</p> <p align="center">SCHOLZE ET AL.</p>	
	<p>Examiner</p> <p align="center">Jared W. Radkiewicz</p>	<p>Art Unit</p> <p align="center">2624</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date <u>2/25/2005</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: ____.</p> |
|---|---|

DETAILED ACTION

Amendments

This office action is responsive to the preliminary claim and specification amendment received on 2/25/2005. **Claims 1 - 8** remain pending

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 3, 4, 5, 7, and 8** are rejected under 35 U.S.C. 102(b) as being anticipated by Bolle et al. (US 5,963,656).

Regarding **claim 1**, Bolle teaches a method of assessing the quality of skin print images, and particularly fingerprint images ("method for processing fingerprint images and rejecting poor quality and/or partial fingerprint images", Column 1 Line 6-9), characterized in that

gradients are formed for the individual picture elements (pixels) of the skin print images ("Specifically, step 840 first computes the directional histogram, for each block, based on the directions of pixels within it.", Column 7 Lines 46-48), in that

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a mean value is formed from the gradients of the pixels in one region of the image (tile) at a time ("If there is a block direction, i.e., a prominent direction, the direction is noted", Column 7 Lines 34-36), and in that

similarities in the mean values from tile to tile form a measure of quality ("Q is therefore obtained by computing the ratio of total weights of directional blocks to the total weights for each of the blocks in the foreground", "The computed quality Q is used as a measure of how much reliable directional information is available for an acquired fingerprint image", Column 9 Line 24-31).

Regarding **claim 5**, Bolle also teaches a system for assessing fingerprint image quality ("system and method", Column 1 Line 7).

Regarding claims **3 and 7**, Bolle teaches a method as claimed in claim 1, characterized in that

the mean values are entered in two directional matrices for x and y ("the directional histogram, for each block, based on the directions of pixels within it", Column 7 Line 47), in that

scalar products are formed of the directional matrices together with the matrices that are displaced horizontally, vertically and in the directions of both diagonals by one tile ("Note that in this embodiment, three neighbor pixels are selected in each of the positive (950) and negative (960) directions along each of the 0, 45, 90, and 135 degree directions/paths", Column 6 Line 47-51), in that

each of the products that were obtained in that way by multiplying the matrices are summed over all the tiles, and in that the sums are added together and are divided by the sum of the scalar products of the directional matrices with themselves in order to form the quality measure, said sum of the scalar products of the directional matrices with themselves being summed up over all tiles ("In a preferred embodiment, since all of the block have an equal area, the quality (i.e., the ratio of the areas above) of a fingerprint image Q is therefore obtained by computing the ratio of total weights of directional blocks to the total weights for each of the blocks in the foreground 1030, i.e. $Q = \frac{\sum [w_{sub.i} ; x_{sub.i} \text{ is a-directional block}]}{\sum [w_{sub.i} ; x_{sub.i} \text{ is a foreground block}]}$ The computed quality Q is used as a measure of how much reliable directional information is available for an acquired fingerprint image. If the computed Q is less than the quality threshold, TH, the image is rejected 871", Column 9 Line 21-31).

Regarding **claims 4 and 8**, Bolle teaches a method as claimed in claims 1 and 5, respectively, characterized in that the lengths of the average gradients are used to determine a region of interest of the skin print that has been scanned ("One embodiment of the invention makes these determinations by summing the intensity differences between the pixels in the block and their neighbors along one or more directions to classify the pixels as either foreground or background pixels. Blocks with over a threshold number of background pixels are background blocks, the other blocks are foreground blocks", wherein "intensity differences between the pixels in the block and their neighbors along one or more directions" is a gradient operation and the

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classification operation compares the gradient to a threshold value to decide if the pixel is foreground or background, Column 3 Lines 39-43).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 2 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle et al. (US 5,963,656) in view of Jain et al. (US 6,263,091 B1).

Regarding **claims 2 and 6**, Bolle teaches claims 1 and 5, respectively.

Bolle does not teach the method as claimed in claim 1 and 5, characterized in that the gradients formed initially, which have the components $g_{sub.x(alt)}$ and $g_{sub.y(alt)}$, are squared after the fashion of a complex number by

Jain teaches using gradient components in the complex domain ("Prewitt Operator", Jain Column 9 Lines 15-35), necessitating a transform similar to the Pythagorean triple represented by the formulas $g_{sub.x}=g_{sub.x(alt)}^{sup.2}+g_{sub.y(alt)}^{sup.2}$ and $g_{sub.y}=2g_{sub.x(alt)}*g_{sub.y(alt)}$.

It would have been obvious at the time of invention to one of ordinary skill in the art to use the gradients of Bolle in a manner as suggested by Jain as a method of "obtaining mean 180-degree invariant X and Y gradients from the raw unprocessed

gradients" (Jain Column 9 Line 65) in a process to separate regions of interest in fingerprint images as seen in both Bolle and Jain.

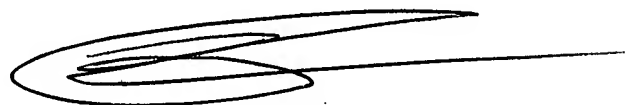
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jared W. Radkiewicz whose telephone number is (571) 270-1577. The examiner can normally be reached on 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JWR



BRIAN WERNER
SUPERVISORY PATENT EXAMINER